

Species Listing PROPOSAL Form:
Listing Endangered, Threatened, and Special Concern Species in Massachusetts

Scientific name: *Viola nephrophylla* Current Listed Status (if any): **Endangered**

Common name: **Northern Bog Violet**

Proposed Action:

 Add the species, with the status of :

X Remove the species

 Change the species' status to:

Change the scientific name to:

Change the common name to:

(Please justify proposed name change.)

Proponent's Name and Address:

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Association, Institution or Business represented by proponent: **NHESP**

Proponent's Signature:

Date Submitted: **January 3, 2008**

Please submit to: Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife, 1 Rabbit Hill Road, Westborough, MA 01581

Justification

Justify the proposed change in legal status of the species by addressing each of the criteria below, as listed in the Massachusetts Endangered Species Act (MGL c. 131A) and its implementing regulations (321 CMR 10.00), and provide literature citations or other documentation wherever possible. Expand onto additional pages as needed but make sure you address all of the questions below. The burden of proof is on the proponent for a listing, delisting, or status change.

(1) Taxonomic status. Is the species a valid taxonomic entity? Please cite scientific literature.

Viola nephrophylla Greene is a valid taxonomic entity. It was first described in 1896 (*Pittonia* 3: 144).

(2) Recentness of records. How recently has the species been conclusively documented within Massachusetts?

Contrary to its current listing status (Endangered), and based on a review of the public herbaria known to harbor the most Massachusetts collections, this taxon is not known to have been collected in Massachusetts since 1909. Based on the lengthy efforts described below, NHESP proposes to remove *V. nephrophylla* from the MESA list because we cannot confirm that it has been observed or collected in Massachusetts in the past 25 years.

The Northern Bog Violet is a species primarily of cool, hydric, alkaline habitats, including fens, gravel to cobble rivershores, and meadow seeps (Fernald, 1950; Haines, 2001). The presence of several current NHESP element occurrences of *Viola nephrophylla* on roadside banks and on fluvial soils aroused suspicion about the identification of specimens in these areas. Accordingly, a review of all voucher specimens and field sites (in the single case where no voucher existed) for this Endangered species was undertaken by staff botanist Melissa Dow Cullina and Arthur Haines of the New England Wild Flower Society, author of *The Genus Viola of Maine* (2001).

Our research into the diagnostic characters (sepal shape, sepal cilia, petal pubescence, and leaf pubescence; see Haines, 2001 and Brainerd, 1905) of Massachusetts voucher specimens at the Harvard University Herbaria (GH and NEBC), the University of Massachusetts (MASS) and the New York Botanical Garden (NY) revealed that nearly all of the voucher specimens were mis-determined by the original collectors. All but two Massachusetts specimens were annotated by Cullina and/or Haines to *Viola sororia*, *V. cucullata*, *V. macloskeyi*, or introgressants of these. Of the two remaining voucher specimens, both were collected in historical times (1909 in Clarksburg and 1919 in Sheffield). Only one of these (Clarksburg, 1909) both occurs in appropriate habitat and has the correct morphology for *V. nephrophylla*; the other occurs in questionable (fluvial) habitat and was not collected at the proper phenological stage to definitively identify the plants (and hence is not included in the NHESP database).

The single unvouchered station of this plant was recorded in 1984 along a roadside above the banks of the Deerfield River in Florida. Cullina and Haines searched the area for *V. nephrophylla* in May of 2007, however neither the plant nor its appropriate habitat were found. The violet found in abundance there was *Viola sororia*, and we speculate that relatively glabrous individuals of *V. sororia* were mistaken for *V. nephrophylla* by the original surveyor. In any case, the occurrence was not vouchered and therefore we cannot say for certain that *V. nephrophylla* was or was not collected there in 1984.

In an effort to re-discover *V. nephrophylla* in Massachusetts, Cullina and Haines visited and searched several fens and wet meadows in the marble valleys of the Berkshires during the spring of 2006. In addition, during the spring of 2007, we specifically searched likely areas in Clarksburg to no avail.

This detailed review of *Viola nephrophylla* voucher specimens and field sites indicates that listing *V. nephrophylla* as Endangered is inaccurate and inappropriate since it has not been observed in Massachusetts since 1909. This taxon should be removed from the MESA list and categorized as “Historical” (SH).

- (3) **Native species status.** Is the species indigenous to Massachusetts?
- (4) **Habitat in Massachusetts.** Is a population of the species supported by habitat within the state of Massachusetts?
- (5) **Federal Endangered Species Act status.** Is the species listed under the federal Endangered Species Act? If so, what is its federal status (Endangered or Threatened)?
- (6) **Rarity and geographic distribution.**
 - (a) Does the species have a small number of occurrences (populations) and/or small size of populations in the state? Are there potentially undocumented occurrences in the state, and if so, is it possible to estimate the potential number of undocumented occurrences?
 - (b) What is the extent of the species’ entire geographic range, and where within this range are Massachusetts populations (center or edge of range, or peripherally isolated)? Is the species a state or regional endemic?

(7) Trends.

(c) Is the species decreasing (or increasing) in state distribution, number of occurrences, and/or population size? What is the reproductive status of populations? Is reproductive capacity naturally low? Has any long-term trend in these factors been documented?

(8) Threats and vulnerability.

(d) What factors are driving a decreasing trend, or threatening reproductive status in the state? Please identify and describe any of the following threats, if present: habitat loss or degradation; predators, parasites, or competitors; species-targeted taking of individual organisms or disruption of breeding activity.

(e) Does the species have highly specialized habitat, resource needs, or other ecological requirements? Is dispersal ability poor?

Conservation goals.

What specific conservation goals should be met in order to change the conservation status or to remove the species from the state list? Please address goals for any or all of the following:

(a) State distribution, number of occurrences (populations), population levels, and/or reproductive rates

(b) Amount of protected habitat and/or number of protected occurrences

(c) Management of protected habitat and/or occurrences

Literature cited, additional documentation, and comment

Brainerd, E. 1905. Notes on New England violets—II. *Rhodora* 7: 1-8.

Fernald, M.L. 1950. *Gray's Manual of Botany. Eighth Edition.* D. Van Nordstrom Co. New York, New York.

Haines, A. 2001. The Genus *Viola* of Maine. V.H. Thomas Company, Bowdoin, Maine.

